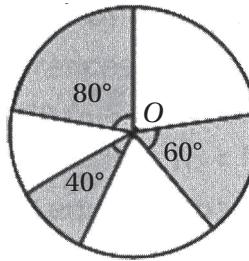


MCQ Type Questions

1. In the given figure, three sectors of a circle of radius 7 cm, making angles of 60° , 80° and 40° at the centre are shaded. The area of the shaded region (in cm^2) is [Use $\pi = \frac{22}{7}$]



(A) 77

(B) 154

(C) 44

(D) 22

[**Hints:** Area of shaded region = $\frac{\theta}{360^\circ} \times \pi r^2$]

2. The ratio of the areas of the incircle and circumcircle of a square is

(A) 1 : 2

(B) 1 : 3

(C) 1 : 4

(D) 1 : 2

[**Hints:** Ratio = $\pi \left(\frac{a}{2}\right)^2 : \pi \left(\frac{a}{\sqrt{2}}\right)^2$ where a = length of side of square]

3. A circular wire of radius 42 cm is cut and bent into the form of a rectangle whose sides are in the ratio of 6 : 5. The smaller side of the rectangle is

(A) 30 cm

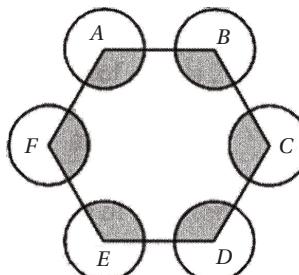
(B) 60 cm

(C) 70 cm

(D) 80 cm

[**Hints:** Perimeter of circle = perimeter of rectangle]

4. ABCDEF is any hexagon with different vertices A, B, C, D, E and F as the centres of circles with same radius r are drawn. The area of the shaded portion is



(A) πr^2

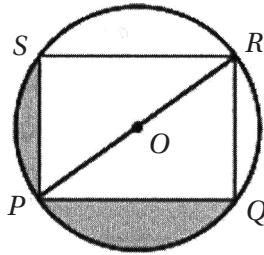
(B) $2\pi r^2$

(C) $3\pi r^2$

(D) $4\pi r^2$

[**Hints:** Area of shaded region = $\frac{\theta}{360^\circ} \times \pi r^2$]

5. In the figure, $PQRS$ is a square and O is centre of the circle. If $RS = 10\sqrt{2}$, then area of shaded region is



(A) $90\pi - 90$ (B) $80\pi - 80$
 (C) $50\pi - 100$ (D) $100\pi - 100$

[Hints: Find r . Then 2 (area of one segment) = Area of shaded region]

6. If the sum of the circumferences of two circles with radii R_1 and R_2 is equal to the circumference of a circle of radius R , then

(A) $R_1 + R_2 = R$ (B) $R_1 + R_2 > R$
 (C) $R_1 + R_2 < R$ (D) cannot say anything

7. If the perimeter of a circle is equal to that of a square, then the ratio of the area of circle to the area of the square is

(A) $14:11$ (B) $12:13$ (C) $11:14$ (D) $13:12$

[Hints: $2\pi r = a^2$]

8. Perimeter of a quadrant of a circle of radius r is equal to

(A) $\pi r + 2r$ (B) $\frac{\pi r}{2} + 2r$ (C) $2\pi r + 2r$ (D) $\frac{\pi r}{2} + r$

9. If the area of a sector of a circle of radius 6 cm is $9\pi \text{ cm}^2$, then the angle subtended at the centre of the circle is

(A) 30° (B) 60° (C) 90° (D) 120°

[Hints: area of sector = $\frac{\theta}{360^\circ} \times \pi r^2$]

10. A race track is in the form of a ring whose inner and outer circumferences are 437 m and 503 m respectively. The width of the track is

(A) 10.5 m (B) 20.5 m (C) 21 m (D) 30 m

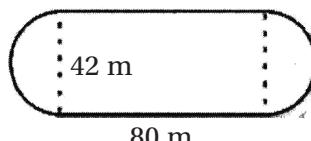
[Hints: Width = $R - r$]

SA-I Type:

11. A sector is cut from a circle of radius 21 cm. The angle of the sector is 150° . Find the area of the sector.

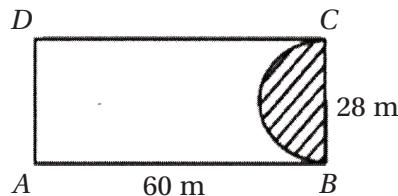
[Hints: area of sector = $\frac{\theta}{360^\circ} \times \pi r^2$]

12. A playground is in the form of a rectangle having semicircles on the shorter sides. Find its area when the length of the rectangular portion is 80 m and the breadth is 42 m.



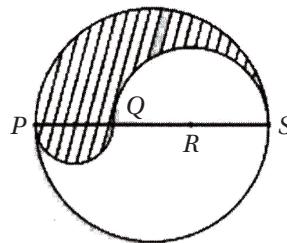
[Hints: Area = area of two semi circles + area of rectangle]

13. A plot is in the form of a rectangle $ABCD$ having semicircle on BC as shown in the figure. The semicircle portion is grassy while the remaining plot is without grass. Find the area of the plot without grass where $AB = 60$ m and $BC = 28$ m.



[Hints: Area = area of rectangle – area of semi-circle]

14. $PQRS$ is a diameter of a circle of radius 6 cm. The lengths PQ , QR and RS are equal. Semi-circles are drawn on PQ and QS as diameters. Find the perimeter of the shaded region.



[Hints: Perimeter = $\pi(r_1 + r_2 + r_3)$]

15. $OABC$ is a rhombus whose three vertices A , B and C lie on a circle with centre O . If the radius of the circle is 10 cm, find the area of the rhombus.

[Hints: Area of rhombus = $2 \times$ area of equilateral triangle of side 10 cm.]

ANSWER

1. A	4. B	7. A	10. A	13. 1372 m^2
2. A	5. C	8. B	11. 577.5 cm^2	14. $12\pi \text{ cm}$
3. B	6. A	9. C	12. 4746 m^2	15. $50\sqrt{3} \text{ cm}^2$